

PRESERVATION OF HISTORICAL MATERIALS BY XEROGRAPHY

Luther H. Evans

It is generally recognized that civilization is dependent in large measure for its existence, its increase, its spread, its depth of vision, and its stability on the existence of a system of preserving what is communicated between men. The possession of an oral language is of basic importance, but until language exists in written form men are very much at the mercy of day-to-day events, and are unable to develop and sustain a high degree of civilization. The importance of written records lies largely in the fact that they give depth to the study of cause and effect in the universe; without this depth the affairs of the universe appear to men to be guided by caprice and not by universal laws. The experience, the thought and the aspirations of one generation can be made accessible to later generations largely because written languages exist.

Much depends upon the materials available for the recording of the written record, and the manner in which these materials are held together in units, in other words the paper, the ink, and the binding, or their counterparts. Much of what has been saved from antiquity, and indeed from more recent periods, and also much of what has been lost, is explainable in large part by the presence or absence of certain kinds of writing materials.

Fortunately for us the writing and carving of ancient times was usually made on durable materials: on clay tablets, on stone, on papyrus, on vellum, and on paper of lasting qualities, and except for castings and carvings, with inks of a high degree of permanence. Terrific losses were suffered through wars, fires, and neglect. But the fragmentary record we have is precious, and we have it only because the materials on which the writing was done were superior to those generally employed today.

Think of the great fortune that is ours because the paper used 500 years ago at the dawn of printing from movable type was of such excellence that

books printed then are perfectly preserved today. We could not have built our civilization to its present heights had the paper of Gutenberg's time been of today's quality.

In the past hundred years we have seen the widespread use of paper made by machine processes of the wood of trees, a process which leaves a high acid content in the final product. In a few short decades this paper crystallizes and crumbles into dust. The rate depends on the amount of the acid content. Thus, newspapers are usually printed on paper of high acid content and are practically useless after 30 or 40 years. The average run of books will last longer, but most of them printed in the last 80 or 90 years also are doomed to early deterioration and disappearance.

There has been a second technical development in the last century or more which will help us make a successful rescue. That is photography. This great invention is now widely applied to the reproduction of newspapers in permanent form. By permanent I do not mean everlasting, but rather in the sense of centuries. Far from enough has been done to save the printed production of the past century, but the main tool for this task is available in the form of microfilm. Librarians with wide cooperation from publishers, business entrepreneurs and others, both in this and other lands, have done much to begin solving the problem, and they are busily at work to come nearer the goal. They realize the enormous importance of the century behind us and also of the years just ahead. The revolutions which have been unleashed in the last century have transformed the world, and they have not spent themselves. They are the revolutions in science, in technology, and the attendant mass production, in education, in national independence, and in democracy. Another has begun, namely, the revolution in international interdependence. To preserve the records of these revolutions, the records which have been made, the records yet to be made, not only in print, but also in unprinted records, is one of mankind's greatest obligations to its own future, and should be one of the principal concerns of all persons



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of education and culture, all segments of our system of free enterprise and democratic society.

With microfilm as the medium we can save the record. Let us put on the pressure to accelerate the transfer of the previous images to cellulose acetate.

But, no matter how much we love microfilm, and how much we praise its role, it is not the real answer when we concern ourselves with the use of the material it records. Even for the use of scholars, microfilm is not a good enough answer. Its roll form and its special lighting will not do the job which must be done.

We have tried many expedients in the past two or three decades, but they are not entirely satisfactory, or are too costly for wide use.


Here is where Haloid Xerox comes to the rescue. Others can tell you about its technical features. I am interested in its possibilities in saving the records of the past century, and those of the future which may be made on an inferior grade of paper. By bringing the original image recorded on a deteriorating base to an equally good image of original size, or larger if desired, on new paper by rapid and relatively economical means, Haloid is placing a new tool in the hands of the custodians of this most important portion of our cultural heritage. Not only can we have reproductions in easily and unaided readable form of originals still extant, but also of everything already available in microfilm or other photographic form, which includes an increasing volume

of material not otherwise available. If permanent paper is used, we have the tools for success.

I imagine that in even a long future most of the work of Haloid's new process will be for copying of drawings and other papers used in current business operations. This also adds to the possibilities of preserving for future generations the materials which tell them about the state of civilization in our time. Much of the world story of man's experience in the past century is to be found only in the records of American business concerns. Much of world history of the next century will no doubt also be found in them. Perhaps some planning and stimulation are needed to have the more important records kept systematically in the new form.

One of the things I like about American business today is its willingness to allocate large sums of the stockholders' money to research, pure as well as applied. There is need for more research on the possibilities of Xerography. One of these which bothers the librarians is the problem of printing on only one side of the paper. Try to solve this one. If you do you will open the way to an even brighter future than now beckons. Also, find ways of insuring that paper for all Xerox processes can be provided with pH/6.5 or above, so that the reproductions themselves will not eventually crumble into crystalline flakes of dust. A third problem, could you set up a lens system that could project the image, by mirrors or prisms, onto a battery of Xerox printers, so that many copies of the same text could be made simultaneously? What is this new Research and Engineering Center for if not to solve problems such as these?

As one who never made his living in a concern which could live without taxes or gifts, I may not be in the best position to tell people who live the hard way how to manage their affairs, but I would give you this advice: Spend more of your resources on research, both pure and applied. If you do not do this, the government will probably take even more than at present for its own research program because research must be done, even if by the taxation route. If you spend it, you will probably get it back; if the government takes it, you may or you may not, who can say?

One personal word before I conclude these brief remarks. As one of the founders of the American Documentation Institute a quarter of a century ago, as one of its presidents several years ago and as the editor of its quarterly journal, American Documentation, I intend to devote a good portion of my time to the problem of preserving the written and photographic records of our civilization. I hope that in this work I will have many occasions to work with the people of Haloid Xerox in projects dedicated to the inspiring cultural mission of which I have spoken today. I thank you. 

[Microcosm wishes to extend its thanks to Dr. Evans and to the Haloid Xerox Company for permitting this address to be printed here. This was originally an address on the occasion of the new Haloid Xerox Research and Engineering Center, Webster, New York, September 27, 1960.]

DOC OFFICE CLASSIFICATION



A Review by M. Sangster Parrott,
Documents Librarian at North
Carolina State Library

Being assigned the task of organizing and cataloging a depository collection of United States government publications makes the librarian keenly aware of the gap of fifteen years when the Documents Office classification numbers did not appear in any of the indexes issued by the Superintendent of Documents. Several excellent tools are available to aid librarians in assigned classification numbers to documents issued in "numbered" series or as serials during this period; however, the only sources for numbers assigned to "cuttered" series of documents are the depository invoices and early editions of the Price Lists.

This problem of assigning classification numbers to the "cuttered" documents that were issued between 1910 and 1924, when classification numbers first appeared in the Monthly Catalog, has now been solved by the publication of DOCUMENTS OFFICE CLASSIFICATION NUMBERS FOR CUTTERED DOCUMENTS, 1910-1924, compiled by Mary Elizabeth Poole and Ella Frances Smith. Part I, compiled by Miss Poole, represents classification numbers for documents in classes A to Y3; Part II, compiled by Miss Smith, is a "checklist of hearings, memorial addresses and addresses on acceptance of statues, and speeches" — classification numbers Y 4 to Y9.

A recent interview with Miss Poole and a brief review of a pre-publication draft of the compilation has revealed some points of the usefulness this publication will have for libraries:

Complete classification numbers will be available for documents in the "cuttered" series that were published between 1910 and 1924.

Several series not enumerated in the 1909 Checklist will be included.

The shelflist arrangement will make it useful as a checklist of holdings.

It will be a useful bibliographic tool for locating titles and classification numbers for interlibrary loan requests.

As is true of any publication of this type, there are some disadvantages to be noted, none of which is marked:

It will not be a complete list. Omissions of some classes which the compilers did not deem necessary for inclusion were deliberate, including "confidential and restricted" material, some series which appeared in "Cuttered" classes and serial form such as the "Executive Orders and Proclamations of the President."

An index is lacking. Although an index would be helpful in using the compilation, it is not necessary since there are already available many fine indexes to the documents, such as the Documents Index (1895-1933), the Documents Catalogue (1896-1945), and the Monthly Catalog (1895+).

Publication of a list of this type will come somewhat late to be of great use to those librarians who have assigned numbers to the publications independently. The process of re-cataloging and renumbering the documents of this period would be far too time consuming and expensive for most libraries. The advantage will be for those librarians working with older collections of documents which have not been cataloged or classified.

Miss Poole and Miss Smith are to be commended for the vast amount of work that has gone into the compilation of this publication over a period of some ten years. And librarians will find it a useful addition to their reference collections for many years to come.

[For your copy of this book order OP 6268 from University Microfilms, Inc. Cloth bound, \$25.00]



ONE BOOK -- TWO KINDS OF PAPER

Ben C. Bowman
Newberry Library

Alarms about the magnitude of current and future paper deterioration are commonplace. Every library has its special list of scarce, expensive, important, or hard-to-replace volumes turning slowly to dust, and most libraries have adopted one if not several more or less unsatisfactory remedies for the situation.

A specific and particularly troublesome example of the bad paper problem, especially for a research collection, is the Calendars of Letters and State Papers published in Great Britain by the Public Record Office. The publishers' bindings on these volumes are weak; the paper used is poor; while the books are basic research material, they are generally little used. Consequently, even though a minimum of use and handling causes serious deterioration in many of them, the problem of conservation or replacement tends to be deferred.

At the Newberry we have found deterioration so bad and use so frequent that doing something to prevent total loss of several volumes of the calendars could not be deferred. What we have learned about replacement or reproduction has not been encouraging. Volumes of the Calendars are available at reasonable prices. The English auction records show volumes of the different PRO series almost every year, averaging about \$5.00 each, or even less. But finding and buying the replacements needed means, of course, supplanting bad paper with more bad paper. At the same time, replacement costs by any of the various photo-reproducing or offset methods, on a stable paper, are comparatively high, especially on an individual order or do-it-yourself basis.

[Continued on page 4]

ONE BOOK [from page 3]


Perhaps the most troublesome problem we encountered is that many of the Calendars were printed on not one but two kinds of bad paper, one of which deteriorates much faster than the other. A rough count in Mullins, E. L. C., *Texts and Calendars*; an Analytical Guide to Serial Publications. London, 1958 (the first five sections of Part I) shows that from the early Nineteenth century to date 600-odd volumes of Calendars have been published. Of these, the volumes issued between 1875 and 1900 especially are on a paper that has become brittle but which holds up pretty well until given hard use or careless handling. During this same period, however, the publishers also used quantities of another and especially poor paper. Consequently many signatures, characteristically one or two per volume—often almost an entire volume—have deteriorated much faster than other signatures in the same volume. As a result, there are perhaps sixty or seventy volumes in serious condition, depending on use. Large sections of the Newberry's volumes 6-11 of Acts of the Privy Council (Mullins 3.77), for example, are so far gone as to be unusable.

It is interesting to note that this especially bad paper appears to have been used during printing in such a way that bad paper sections correspond from set to set of the Calendars. I have not made an exhaustive comparison, but I have compared volumes in the various Calendars at the Newberry with the same volumes in the libraries of Northwest-

ern, Michigan, and the University of Chicago. The bad paper sections occur on the same pages in most instances.

That the bad paper sections might be identical in all sets suggested, of course, the possibility of a cooperative project utilizing xerography. Accordingly, I made a list of the Newberry's worst volumes and showed it to University Microfilms, discussing with them various possibilities of reproduction. Essentially these are: Production of a master microfilm negative of entire series of the worst Calendars; xerographic reproductions on an individual order basis; and offset lithography.

The existence of a master negative would mean that any or all of the volumes would always be in print, either as positive microfilm or as xerographic copies on a stable paper. University Microfilms now offers a volume or two of the Calendars on its OP list. On this individual order basis, however, the price per volume runs \$35.00 or \$40.00. Offset lithography appears to be the least expensive method of reproduction. Sufficient orders to warrant reproduction on a production basis would enable University Microfilms to supply volumes for about \$16.00 on a long lived paper in hard covers.

It should be added, in conclusion, that University Microfilms is interested in the problem of these PRO volumes, and that their approach is flexible, adapted to the needs not only of libraries seeking replacements, but of libraries desiring to build up their collections by acquiring PRO publications for the first time. 

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